Inside Wallops

National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility, Wallops Island, Virginia Volume XX-02 Number 18 June 17, 2002

Students Learn Science Through Experiments in Space Experiment Modules

Students from across the country spent the week of June 10 at NASA Goddard Space Flight Center's Wallops Flight Facility working along side engineers and technicians in the Shuttle Small Payloads Project Office preparing their experiments for a future flight on the Space Shuttle.

The Space Experiment Module (SEM) was developed by NASA as an educational program for students who want to discover more about space by building experiments that may ultimately fly on a Space Shuttle. The SEM program focuses on radiation and microgravity science projects.

Photo by Ed Parrott.

Tomball High School students put their experiment through vibration testing.

With the help of a teacher or mentor, students design and build an experiment and apply for the annual national competition through the NASA Student Involvement Program (NSIP).

Experiments are qualified for the program through a flight certification process that includes an experiment proposal review.

Selected student experiments are flown in NASA provided modules. The SEM carrier system accommodates ten modules in a standard Get Away Special canister that mounts in the cargo bay of the Space Shuttle.

"This is our third year working with the different NSIP student teams. We work with them through the entire process by helping them mount their experiments into the modules, perform tests prior to installing them in the GAS canisters and then return the experiments to the students following flight," said Chuck Brodell, SEM Project Manager at NASA Wallops Flight Facility. "It's always exciting when there's a Shuttle flight carrying the student experiments."

The four-member student team from Tomball (Texas) High School proposed to test, actively and thoroughly, commercially available computer hardware during space flight.

A small personal computer will run memory and hard disk tests during flight. In-flight data will be compared with pre-flight and post-flight results. Flash memory will be tested passively. An appropriate control group will be used.

The student experiment from Woodside (Calif.) School focuses on the effects of microgravity on earthworms and tests their productivity within that state.

The three students conducted several ground-based experiments and extensive research on earthworms to test their reactions to certain situations.

The purpose of the project from the four student Agoura (Calif.) High School team is to demonstrate that convection-based heat-transfer can be created in space using a magnetic fluid known as Ferrofluid.

Ferrofluid has to be exposed to a magnetic field for convection to occur. The heat transfer in a Ferrofluid will be tested in microgravity with and without a magnetic field.

Students from Carver High School, Columbus, GA., submitted an experiment for predicting gaseous heat flow in microgravity.

The rate of heat flow for gases in microgravity is numerically predictable. Without gravity, the convection process stops contributing to the heat flow. By varying the angle of the chamber and observing temperature changes, the four students feel the effect of convection can be isolated and a temperature in space predicted.

SEM is open to U.S. students in grades K-12 and University level. For further information on the SEM program visit: http://www.wff.nasa.gov/~sspp/sem/sem.html

Wallops shorts…….

Sounding Rocket Launches

A NASA Terrier-Black Brant sounding rocket was successfully launched from White Sands Missile Range, N.M., on June 11. The UV/Optical Astrophysics experiment was to simultaneously map a quarter of the sky in four wavelength bands using the Narrow-band Ultraviolet Imaging Experiment for Wide-Field Surveys (NUVIEWS). Dr. Christopher Martin, California Institute of Technology was the principal investigator. The payload was recovered.

A NASA Viper-Dart test round was successfully launched from Wallops Island on June 12. The primary purpose of this experimental flight was to assess the flight performance of the instrumented Viper-Dart configuration. The science payload was designed to learn more about the effects of the relatively unmeasured dust population on the Earth's mesosphere.

A NASA Terrier-Black Brant sounding rocket was successfully launched from White Sands Missile Range, N.M. on June 14. It carried a solar and heliospheric sciences payload to investigate whether Lya loops can be resolved into smaller structures and to measure the temporal and spatial scales of microflares and other explosive events. Dr. Clarence Korendyke, Naval Research Laboratory, was the principal investigator. The payload was recovered.

Congratulations

Berit Bland, Manager of the NASA Visitor Center, was sworn in as a U.S. Citizen at a ceremony held June 12 in Norfolk, VA. Berit, a Swedish Foreign National, is married to Geoff Bland, NASA Observational Science Branch.

In the field

Wallops personnel departed June 16 for Norway to conduct launch operations for two Terrier-Orion sounding rockets currently scheduled for early July from the Andoya Rocket Range.

On June 17, Wallops personnel departed for Hawaii to support launch operations for two Terrier-Lynx sounding rockets scheduled for mid-July.

June is National Safety Month

ManTech Receives Coast Guard Commendation

Photo by Betty Flowers.

Left to right: ManTech employees Henry Henry, Cheryl Outten, Leonard Venzke, Thomes Henman, Charles Tingle, Dr. William T. Hargrove and LCDR Mark Ogle.

On June 13, Liteutenant Commander, Mark Ogle, Commanding Officer of U. S. Coast Guard Group Eastern Shore, presented Dr. William T. Hargrove and ManTech International Corporation with a certificate of appreciation in recognition of their support to the Coast Guard and to ManTech employee, Thomas Henman, as well as for sacrifices made as an employer during the recent Involuntary Military Recall of Coast Guard Reservists.

Henman, a Chief Petty Officer in the Coast Guard Reserve was called to active duty from Sept. 24, 2001, to Jan. 31, 2002, in the wake of the September 11 attacks. During this time, he was allowed to continue to work part-time at his position with ManTech at NASA Wallops Flight Facility in addition to fulfilling his full-time active duty assignment with the Coast Guard.

Family Preparedness Checklist

Protect your family from emergencies by developing a home emergency response plan. The following check list may help you in developing an emergency plan for your family to follow in any disaster.

Does your emergency plan include smoke, gas and carbon monoxide detectors?

Do you have a weather radio and do all members of your family know what the signals mean?

Can each member of your family tell you two ways out of your home? If one way out of a two-story home is a window, do you need a safety ladder?

Can all members of your family operate the locks, windows and doors?

Does your family understand to leave or seek shelter when an alarm sounds?

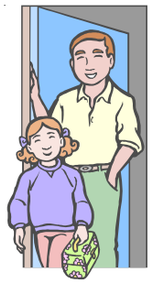
Does everyone in your family know where to go after evacuating your home?

Does each member of your family know who to call for help and are the telephone numbers posted?

In a weather-related emergency, do you know where to seek shelter?

Escape planning and smoke detectors are essential, are the batteries routinely replaced?

Does your family understand that once they are outside, they should stay outside?



Do you have a first-aid kit and is it fully stocked?

Do you have a fire extinguisher and is it serviced?

Do you encourage family members to take first-aid and CPR classes?

If needed, do members of your family know how to shut off the water, gas and electricity to your home?

Does your plan cover whom to call in case of a utility problem?

Do you maintain a supply of tarps or plywood to cover openings created by a storm or fire?

Do you have flashlights, radios, etc., and more importantly, batteries located in a central area known to all family members?

Do you have a written inventory and photographs of all valuable items in your home? Do you have more than one copy located outside of your home?

If you have pets, have you provided for them in your home emergency plan?

Remember, you cannot predict when you and your family will be faced with an emergency. Every second counts when it comes to emergency response. So be prepared for your first - or next - emergency and make every second count for your family's safety.

Math, Engineering and Science Program

A mathematics, engineering and science enrichment pre-college program will be held July 8 to 31 from 9 a.m. to 3 p.m. at the University of Maryland, Eastern Shore (UMES). The program is free to students in grades 9 through 12 who reside in Somerset, Worcester and Wicomico counties in Maryland and Accomack and Northampton counties in Virginia. Programs also are being planned for Saturdays in September, October and November.

Space is limited and the deadline for applications is June 21. The program is co-sponsored by NASA Wallops Flight Facility's Equal Opportunity Programs Office and the UMES, Math and Computer Science Department.

For further information contact Lisa Johnson on x1412 or email: Lisa.C.Johnson.1@gsfc.nasa.gov or contact Dr. Peter Ezekwenna on (410) 651-6425 or by email: pezekwenna@mail.umes.edu

Visit the EO Program Office web site at: http://eeo.gsfc.nasa.gov/wff/index.html.

20th Anniversary of Flight June 27, 2002

To commemorate 20 years of flight and 167 individual missions of the Get Away Special (GAS) Program, the Shuttle Small Payloads Project Office, (SSPPO), Code 870, is sponsoring an Open House from 10 a.m. to 4 p.m. on June 27 at the Goddard Visitor Center. The Open House will be followed by an evening event at the Goddard Recreation Center.

The SSPPO provides carrier systems and mission integration services for small-attached Space Shuttle cargo bay payloads.

Since the flight of the first GAS payload in June of 1982, SSPPO has successfully flown over 250 payloads on the Space Shuttle supporting earth and space science, technology, commercial, and educational payloads.

These missions include the highly successful Hitchhiker payloads and a GAS spin-off, the Space Experiment Module or SEM payloads.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found on the NASA Wallops Flight Facility homepage: www.wff.nasa.gov

Editor Betty Flowers